

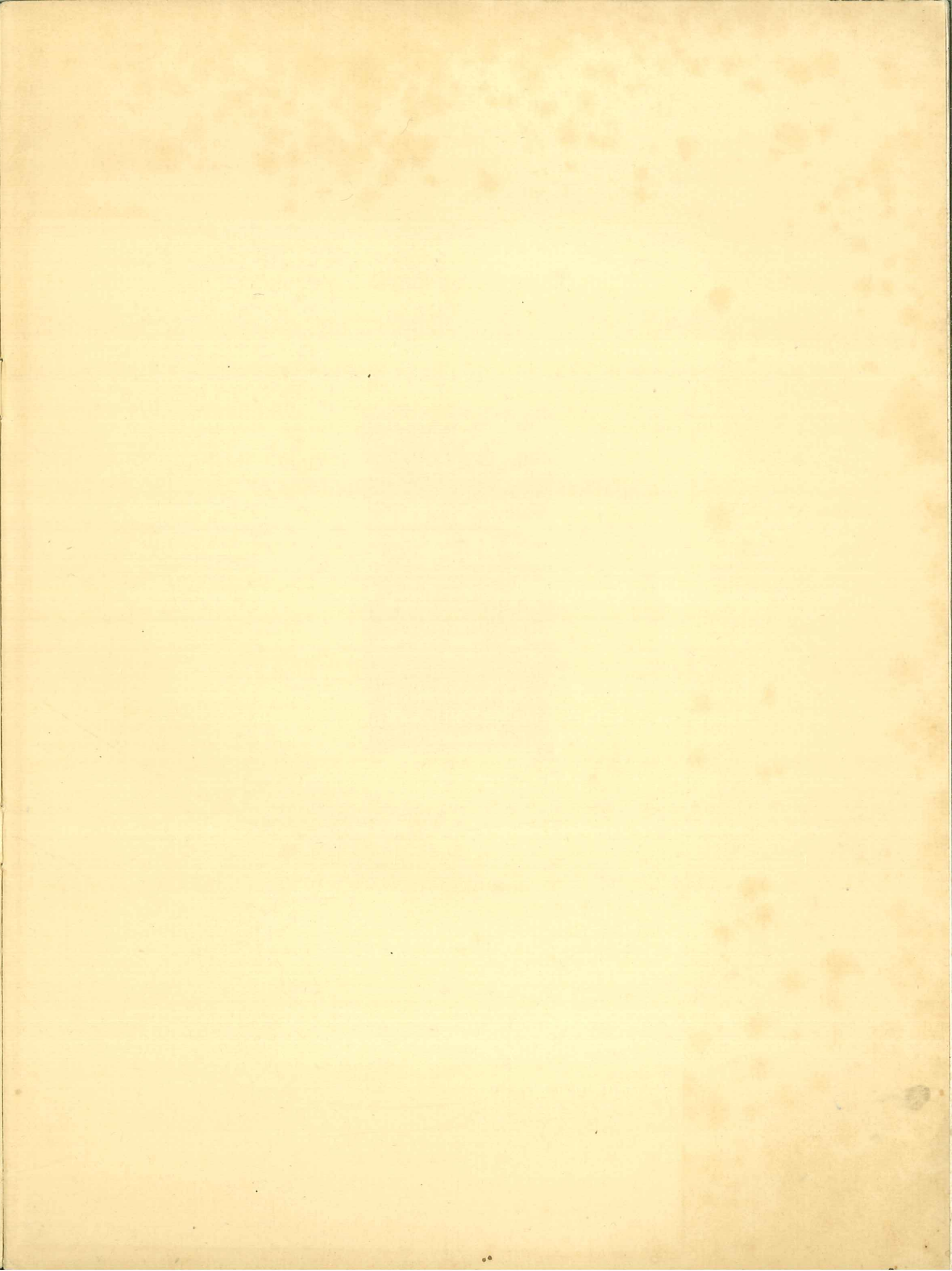
IDEAL  
WATER TUBE  
BOILER

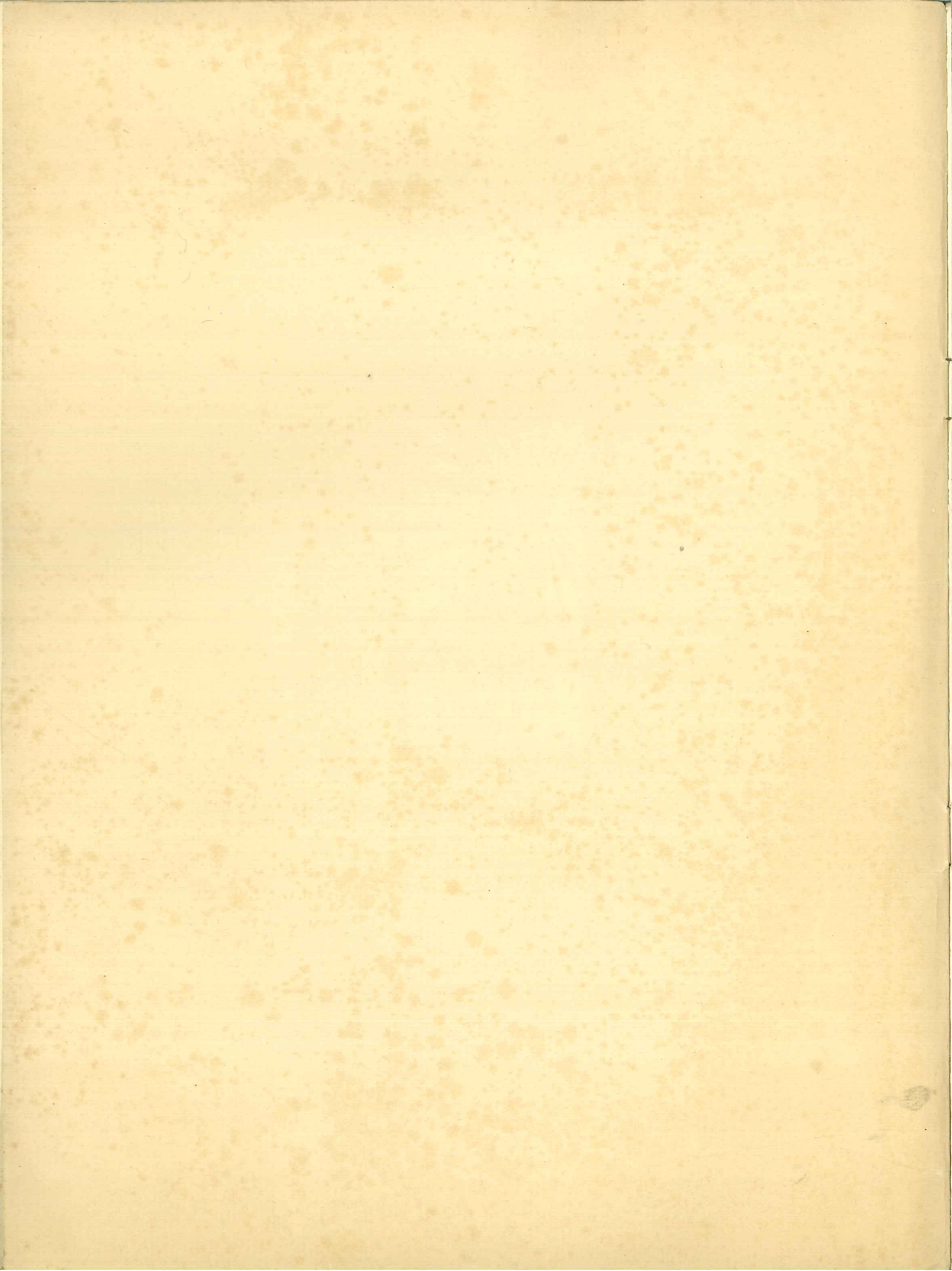
AMERICAN RADIATOR COMPANY

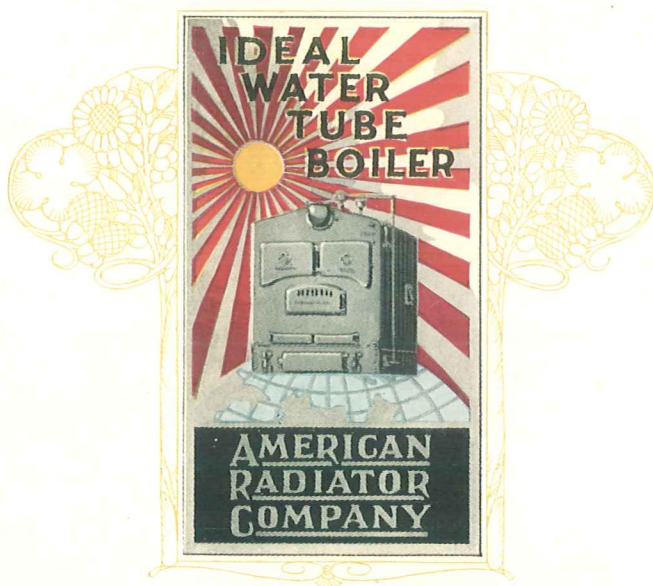
IDEAL

WATER TUBE

BOILER







## Our Ideal



AT the dawn of civilization man lit a fire. It cooked his food; it warmed his body; it protected him from preying animals in the night.

The force within that fire which separated man from savagery in the beginning, is the force which today maintains civilization in the most densely populated sections on the earth. That force is Heat—prime mover of life and greatest of all servants in the march of human progress.

Perfectly to control this force in its service to the heating needs of men, is the ideal of the American Radiator Company. We feel that there is no service of greater consequence to the individual, the family and the nation.

It is with this ideal ever in mind that our heating apparatus are designed and made. They are products of scientific research and long practical experience. We recommend them as representing, in their respective fields, the best values that can be obtained.

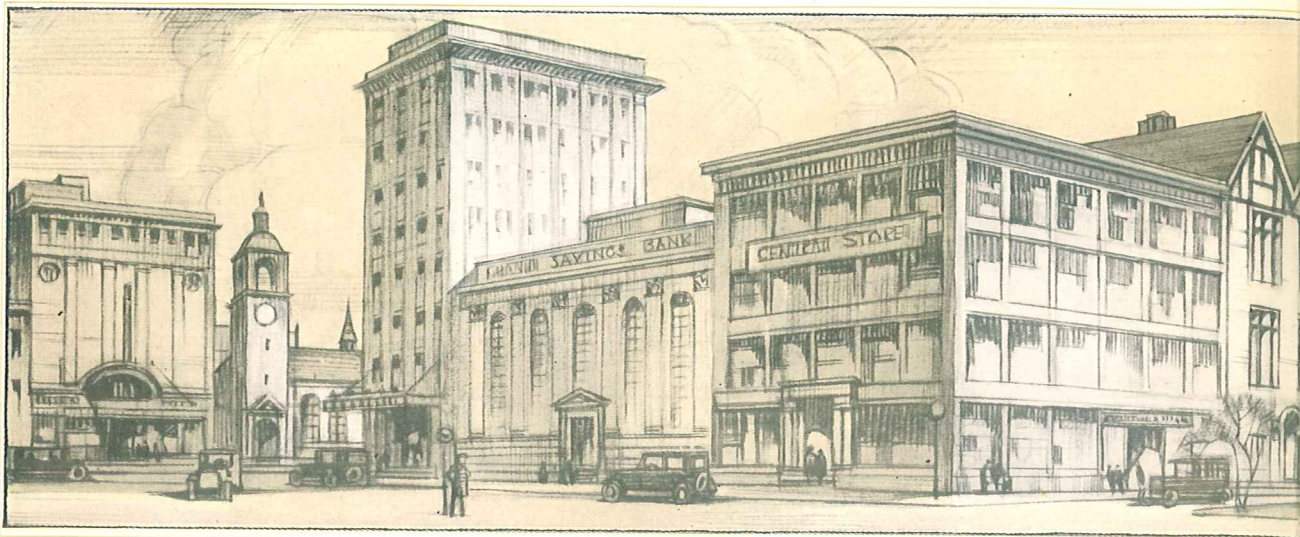
# IDEAL WATER TUBE BOILER



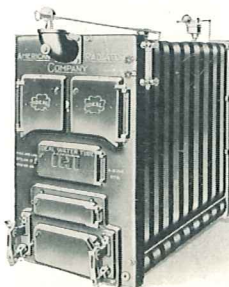
REG. U. S. PAT. OFF.

AMERICAN RADIATOR COMPANY

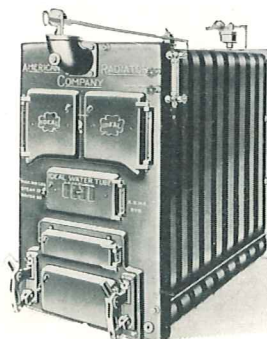
Copyrighted 1925  
American Radiator Company



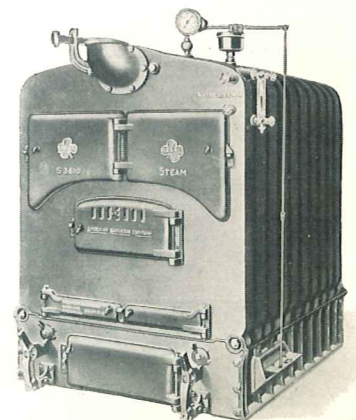
# Ideal Water Tube Boilers



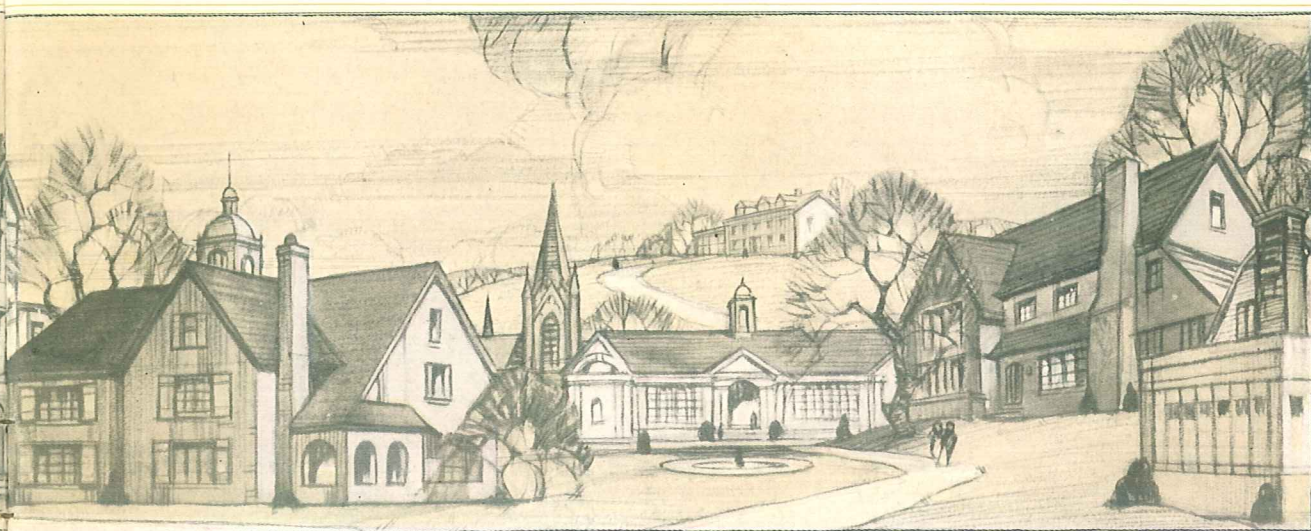
23-Inch



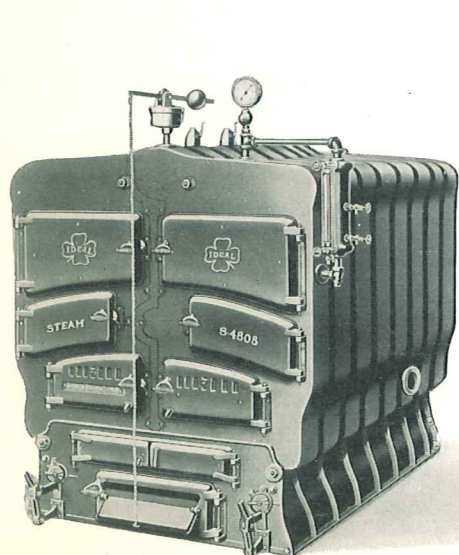
29-Inch



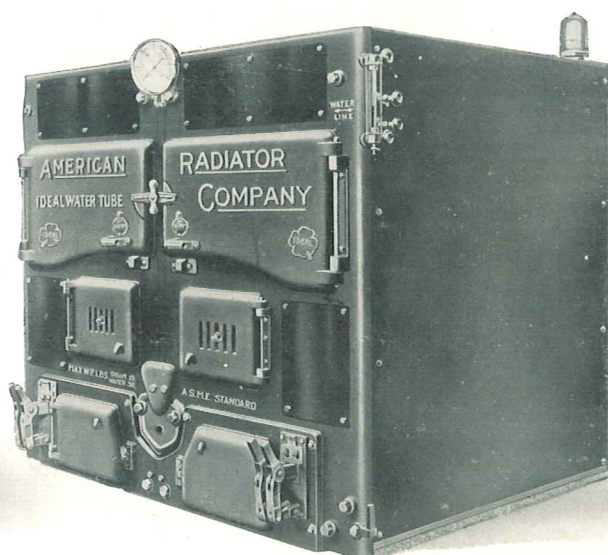
36-Inch



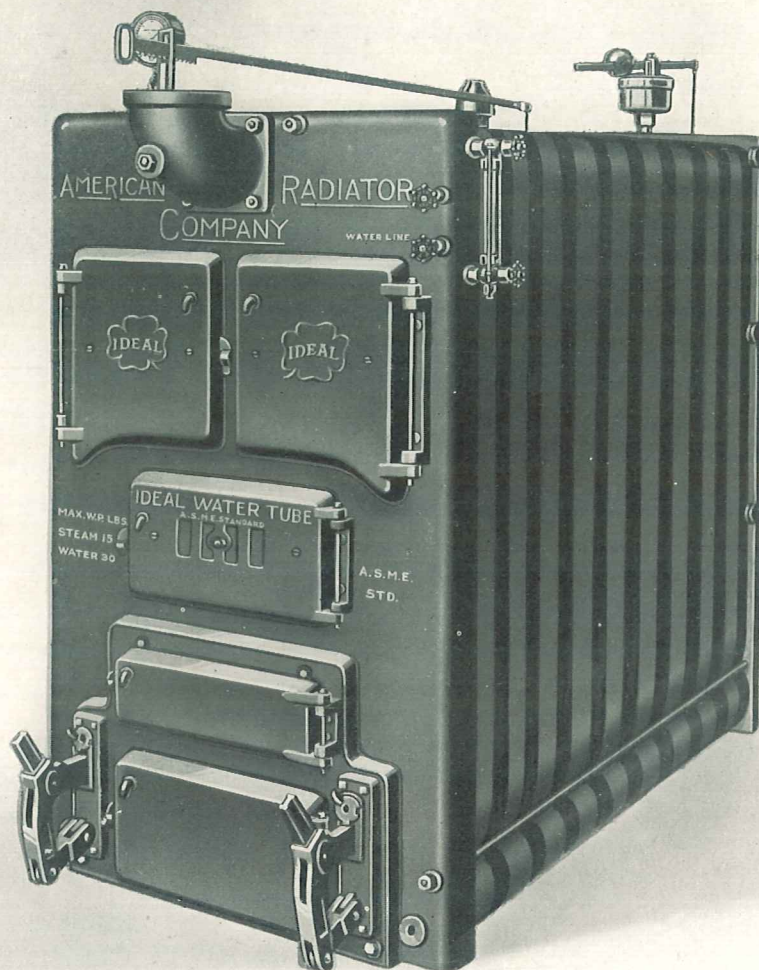
*Designed to serve the heating needs  
of larger residences ~ apartment houses ~  
hotels ~ churches ~ banks ~ clubs ~ stores ~  
theatres ~ and public buildings ~ ~*



48-Inch



79-Inch



## 29" IDEAL WATER TUBE BOILER

IDEAL WATER TUBE BOILERS ARE SCIENTIFICALLY DESIGNED AND CONSTRUCTED TO RENDER EFFICIENT, DURABLE SERVICE WITH THE MINIMUM OF ATTENTION. NOTE THE STURDY, CLEAN-CUT APPEARANCE, ABSENCE OF OLD-FASHIONED, BOTHERSOME CHAINS, THE UNUSUALLY HEAVY DOORS, PLATE WORK AND HINGE PINS, AND FREEDOM FROM MANIFOLDS AND OUTSIDE PIPING

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## THE IDEAL WATER TUBE BOILER IS A PERMANENT INVESTMENT



OF the entire equipment that goes into any house, there is no single item which means so much to the owner from the investment point of view as the heating boiler.

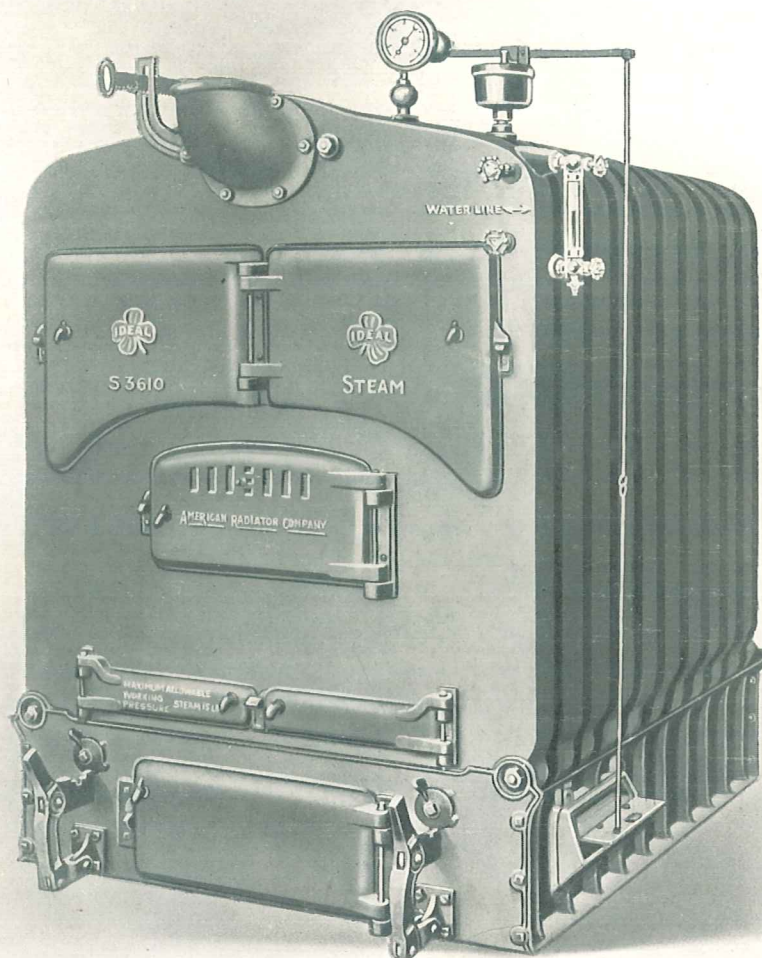
Here is an item, to secure the service of which necessarily involves a certain initial expenditure, and to operate which means yearly maintenance costs in the form of fuel and labor. In return, the boiler is expected to generate the heat to keep the building comfortably warm. The selection of a specific boiler then, becomes a question of balancing service against expenditure. Carefully selected, a boiler means money well invested; but a poorly selected plant becomes a source of endless regret.

The Ideal Water Tube Boiler is a sound, permanent investment. Very reasonable in its initial cost, it operates with unusual economy of coal consumption, and without requiring skilled attendance. It will serve efficiently throughout the lifetime of the building it occupies, and it may be relied upon always to produce quick heating responses to every need.

### Designed to Meet the Heating Requirements of all Types of Buildings

The Ideal Water Tube Boiler is the perfected product of many years of experience. To the solution of actual heating problems as they have presented themselves in buildings of all types and sizes, in all sections of the country, has been brought the service of our staff of heating engineers and the experimental equipment of the largest heating laboratory in the world—the Institute of Thermal Research. Today, the Ideal Water Tube Boiler embodies every desirable feature adapting it especially to the actual working conditions obtaining in its field of service.

The boiler is made in a complete range of sizes. No building is too large to secure its heating advantages.



### 36" IDEAL WATER TUBE BOILER

THE CONTACT FACES ON ALL DOORS AND PLATE WORK IN IDEAL WATER TUBE BOILERS ARE GROUND SMOOTH, MAKING A GAS-TIGHT CONSTRUCTION. THE HIGH STANDARD OF OPERATING ECONOMY AND CLEANLINESS IS PERMANENTLY MAINTAINED

## QUICKLY AND INEXPENSIVELY INSTALLED IN NEW OR OLD BUILDINGS

THE illustration at the bottom of the page shows how the Ideal Water Tube Boiler is made up of individual sections. These sections, even of the largest boiler, may be carried into the cellar through any average-sized doorway or elevator hatch. No tearing down of walls or ripping up of floors is necessary; nor does the boiler require, for erection, any special masonry in the way of pits or brick setting.



Sections of all boilers can be easily moved through the average doorway



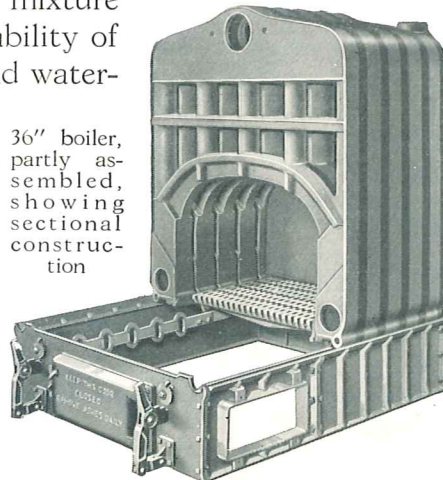
Push nipple used to connect sections, lathe-turned to the thousandth part of an inch

The constructional advantage of the Ideal Water Tube Boiler in this respect, commends it especially to owners of old buildings as well as new. In both instances an installation cost of considerable magnitude is eliminated.

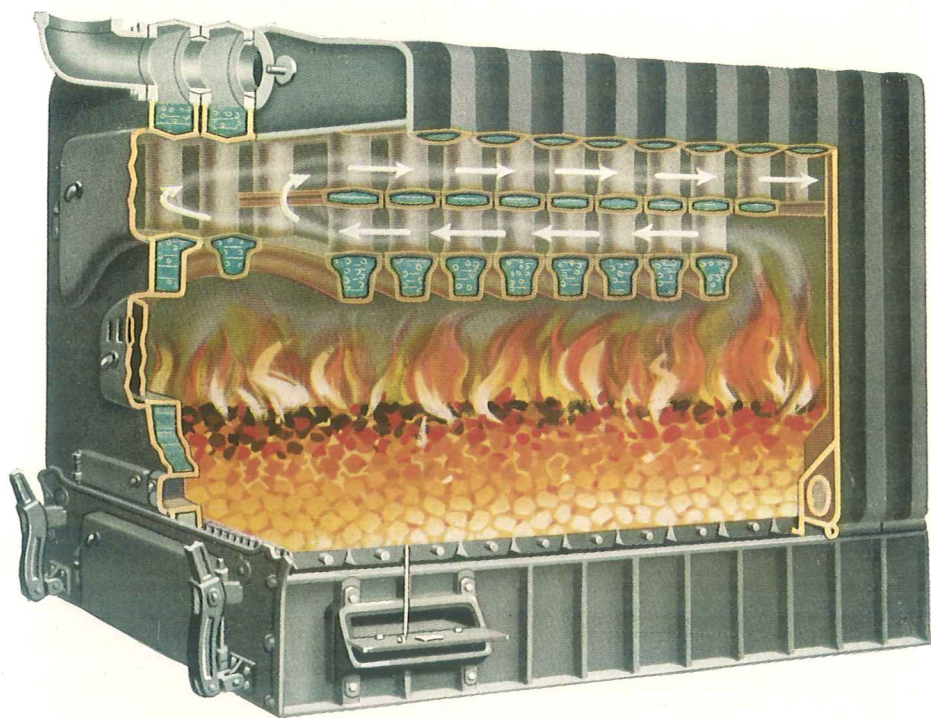
### Enlarged at Any Time to Meet New Heating Requirements

The sections of the boiler are connected by push nipples, lathe-turned to the thousandth part of an inch, which fit snugly into the carefully machined holes at the top and base of the sections. These nipples are made of the same carefully selected iron mixture that is used in the sections. Durability of service and permanently steam- and water-tight connections are insured.

Should it be desired at any time to increase the size of the boiler to meet an enlarged heating requirement, new sections may be readily and inexpensively added at the rear; or if necessary, a battery of two or more boilers can be installed.



36" boiler, partly assembled, showing sectional construction



FRONT-TO-REAR CROSS-SECTION VIEW OF THE  
36" IDEAL WATER TUBE BOILER

THE REFINED BALANCE IN THE DESIGN OF THE GRATE AREA, FIRE CONTACT HEATING SURFACE, FLUE AREA AND GAS TRAVEL; THE MULTIPLICITY OF TUBULAR WATERWAYS WHICH DIVIDE THE WATER INTO MANY THIN STREAMS, AND THE UNUSUALLY LARGE HEAT-ABSORBING SURFACE, ACCOMPLISH QUICK, DEPENDABLE, AND EFFICIENT HEATING FOR ALL IDEAL WATER TUBE BOILERS

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## QUICK HEATING RESPONSES AND DEPENDABLE, EFFICIENT SERVICE

IT IS highly important that a boiler intended for an apartment, hotel, store, industrial building, public building, etc., be capable of developing a large heat output within a very short space of time to meet rapidly fluctuating heating loads, and that it be able to perform in this respect and operate also throughout the normal part of the heating year, with a definite regard for economy in fuel consumption.

The rapidity with which a boiler generates steam or vapor, or produces hot water at its outlet, is a function of no one single feature of its design, but depends, rather, upon the relative proportions existing between all features, and the construction of the boiler. There are not twenty or thirty best designs; there is one—and it may be arrived at and recognized only through very careful experimentation and testing conducted by engineers of skill and practical experience.

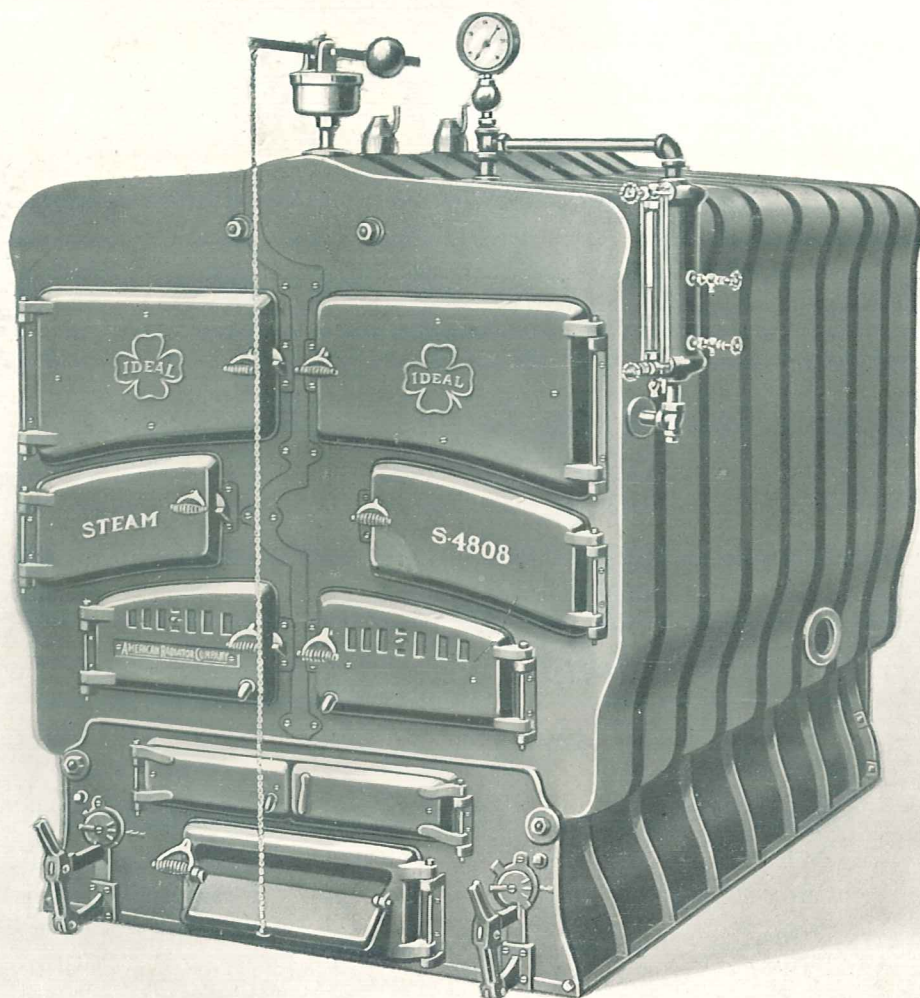
The Ideal Water Tube Boiler is a highly refined product of extensive tests carried out under the supervision of our engineers, supplemented by many years of service under varying conditions, in buildings of all kinds and sizes.

The boiler is well known for its unusual “pick-up,” heat-generating capacity, and for its continued economy of fuel consumption with the minimum amount of attention.

### Unrestricted Internal Water Flow and Long Flue Travel

Outstanding among the features effecting the extraordinarily quick heating response and economical operation of the Ideal Water Tube Boiler, is its extensive array of water-backed vertical tubes, as shown in the illustrations. These tubes divide the



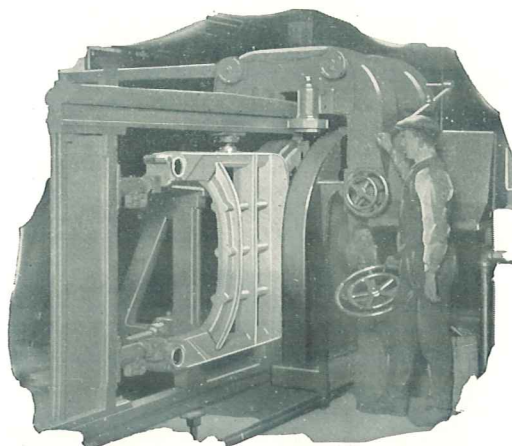


## 48" IDEAL WATER TUBE BOILER

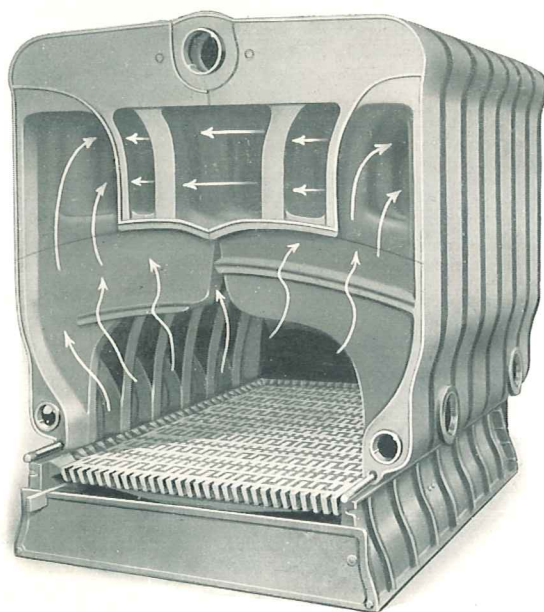
THE 48" SIZE IDEAL WATER TUBE BOILER IS ONE OF THE OLDEST AND BEST KNOWN IN THE SERIES. ITS SPECIAL GAS TRAVEL IS DESCRIBED ON PAGE THIRTEEN. IN POINT OF OPERATING EFFICIENCY AND STURDY CONSTRUCTION, THE 48" BOILER IS THE SAME AS THE OTHER UNITS IN THE SERIES

body of water in the boiler into many thin streams, and intercept the horizontal flow of the hot gases in the upper and lower flue galleries. As the broad sheet of water surrounding the sides and top of the combustion chamber absorbs the radiant heat of the fire, it quickly rises through the vertical tubes, establishing a flow at right angles to the movement of the gases.

The long travel of the hot gases, and the relation of their direction of flow to that of the water, effects a rapid heat transmission from the gases to the water. The waterways throughout are smooth, and the steam disengaging area is large. Quick heating, dry steam generation, and the utilization of the heating value of the fuel to the fullest possible extent, are the results.



On special, immense machinery, contact faces on all sections are machine-ground to smoothness



ILLUSTRATING THE GAS TRAVEL  
IN THE 48" BOILER

Rising out of the combustion chamber at the rear, the gases enter the two outside flues and travel forward to the front of the boiler where they turn and enter the three center flue passages, proceeding to the rear where they pass to the smokehood. Relatively, the proportion of indirect heat-absorbing surface is the same as in the other sizes of Ideal Water Tube Boilers.



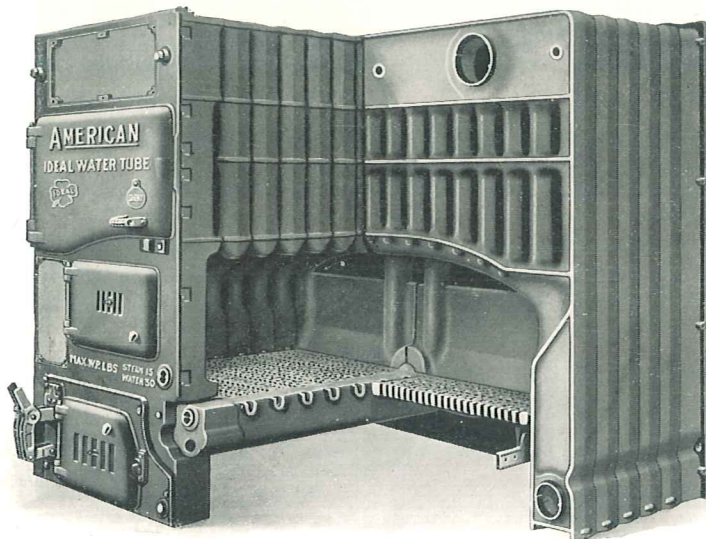
### 79" IDEAL WATER TUBE BOILER

MANY OF THE LARGEST BUILDINGS THROUGHOUT THE COUNTRY ARE HEATED BY THE 79" IDEAL WATER TUBE BOILER IN BATTERY. NO BUILDING IS TOO LARGE FOR ITS USE. THESE BOILERS ARE WATER-BACKED TO THE FLOOR AND HAVE A VERY LOW WATER LINE. THEY ARE COMPACT, CLEAN-CUT, EASILY ATTENDED, AND OPERATE WITH A MARKED ECONOMY OF FUEL CONSUMPTION

### Gas-Tight Iron-to-Iron Construction Insures Permanent Economy

The Ideal Water Tube Boiler incorporates one exclusive feature of construction that insures high operating efficiency during its lifetime—which is that of the building it serves.

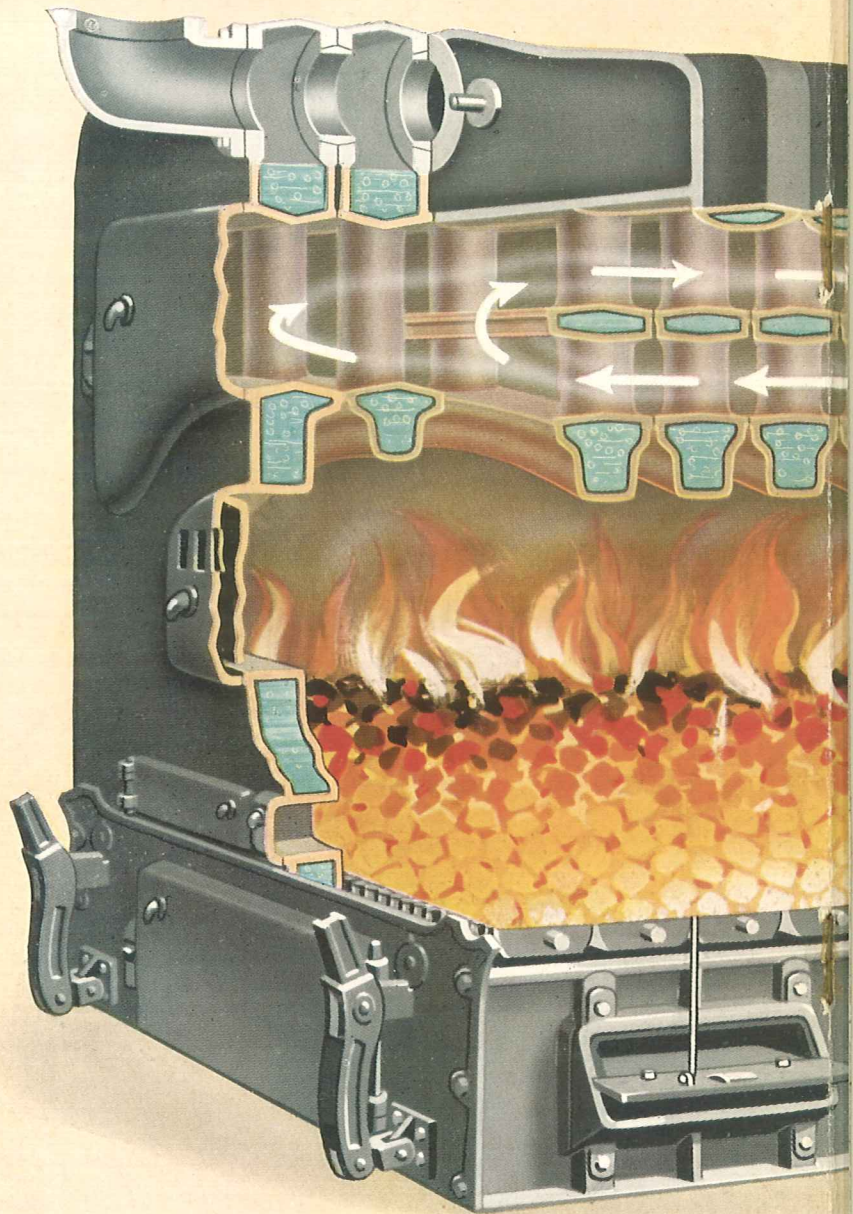
All contacting surfaces on the individual sections are machine-ground to smoothness on special grinding machines. The illustration shows the process. Held rigidly in great iron jaws, each section is worked back and forth through two huge carborundum wheels, until its contacting faces are ground straight and virtually as smooth as marble. When the sections are assembled, therefore, their iron-to-iron contact joints form a gas-tight construction. The hot gases rising out of the combustion chamber are forced to travel through the entire flue course: forward through the lower gallery to the front of the boiler, thence upward and backward through the upper gallery to the smokehood at the rear—a distance twice the length of the boiler. Because of the gas-tight construction, it is impossible for the gases to short-circuit to the smokehood from any point. The construction is permanent; and the utilization of the heating value of the fuel supplied to the boiler in the most efficient degree, is therefore also permanent.



THREE-QUARTER SECTIONAL VIEW OF 79" IDEAL WATER TUBE BOILER

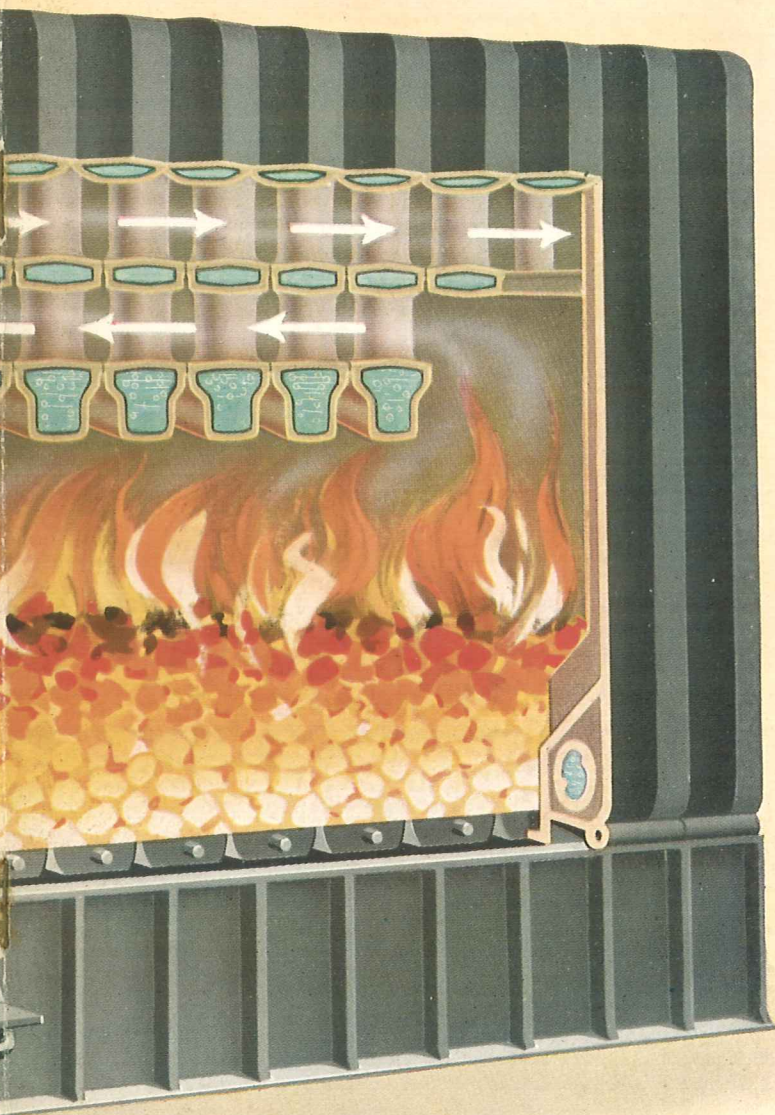
This boiler is cast in half-section units with water-backed legs extending to the floor. Note also that the center grate support is water-backed throughout and cannot burn out. The grates are wide and are made of heavy cast iron. All contact faces on sections, doors and plate work are machined to smoothness. Each detail is carefully designed and constructed to insure efficient heating and durable service.

## SECTIONAL VIEW ILLUSTRATING INTERIOR OF THE IDEAL WATER TUBE BOILER



The Ideal Water Tube Boiler has derived its name from the basic characteristic of its design—the extensive series of water-backed vertical tubes which divide the body of water into many thin streams, and expose an unusually large amount of heat-absorbing surface to the fire and the hot gases of combustion. This design, united with the other features of the boiler—

## INTERNAL DESIGN AND CONSTRUCTION WATER TUBE BOILER



the scientifically balanced proportions of its grate area, direct heating surface, flue area, and gas travel; its gas-tight flue construction; its unusually heavy grates, doors, plate work, and hinge-pins; its large, substantial smokehood and automatic regulation—all unite in accomplishing quick, economical, and durable heating service with the very minimum amount of attention.

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## IDEAL WATER TUBE BOILERS ARE AS DURABLE AS THE BUILDINGS THEY SERVE

IT IS a satisfaction to every owner to know that his boiler will serve efficiently, year after year, without break-down. Ideal Water Tube Boilers render this kind of service. They are made of a carefully prepared iron mixture, unaffected by rust, summer dampness, gases, heat, or water. These boilers practically never wear out.

### Careful Workmanship

Our factories operate on one insistent policy; the quality of Ideal Boilers shall always come first. To this end every step in their manufacture is executed with the same degree of care and skill that characterizes each feature of design. From the raw material to the finished product, every department and operation is surrounded by a careful system of inspection.

### Iron Mixture

In order to insure a thoroughly homogeneous and uniform iron mixture in every boiler, daily chemical analyses are made of each lot of iron, coke and limestone, in accordance with which the relative quantities of these materials are determined before they are placed in the cupola. Then the iron mixture itself, after it has been run from the cupola, is analyzed and tested against our established standard, which is the result of many years of ex-



Chemical Laboratory for testing iron mixtures, maintained at the Institute of Thermal Research

perience in boiler making. Every precaution is taken that the casting used in each Ideal Boiler conforms to specifications.

### Thorough Testing

Each section of every boiler is subjected to an individual hydraulic test of 80 pounds. Representative boilers from every run are then completely assembled and subjected to an-

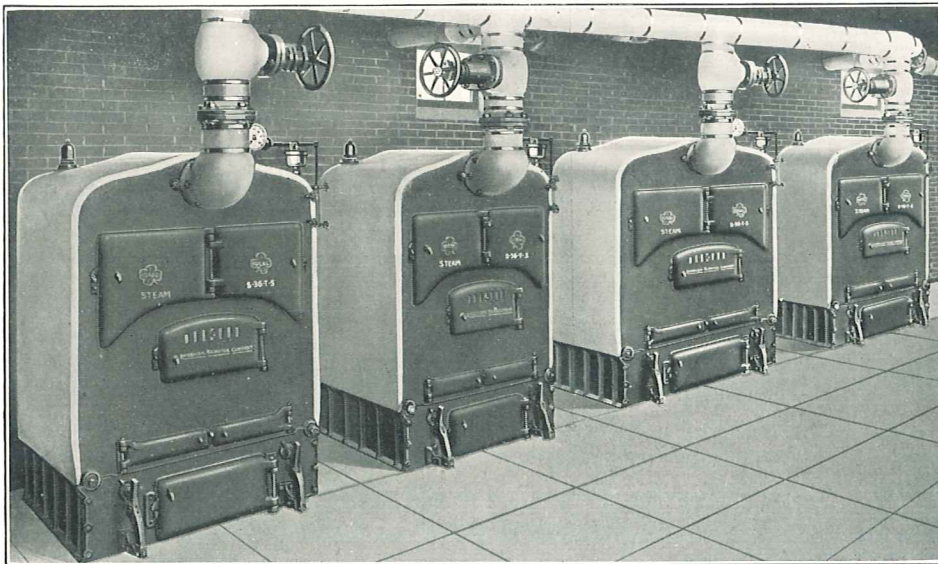
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other 80-pound hydraulic test. Only when it is certain that the boilers are practically perfect in every respect are they passed for shipment.

## MOST EASILY CARED FOR—NO SPECIAL SKILL REQUIRED

OWNERS of buildings requiring the services of boilers of larger heating capacities are being confronted increasingly with the problem of securing skilled attendants for boiler operation. Boilers intended for larger buildings are, of course, called upon to function under the extra burden of widely and rapidly fluctuating heating loads, and their continued, successful and economical performance depends, in most instances, upon the services of skilled operators.

No especial degree of skill whatever is required to obtain permanently satisfactory results with the Ideal Water Tube Boiler. For this the refined balance between its respective features of design is responsible. The boiler presents no more complicated problem for handling than the usual smaller type of household heating plant. The human element is virtually removed as a controlling factor of good performance.



Typical battery installation 36" Ideal Water Tube Boilers

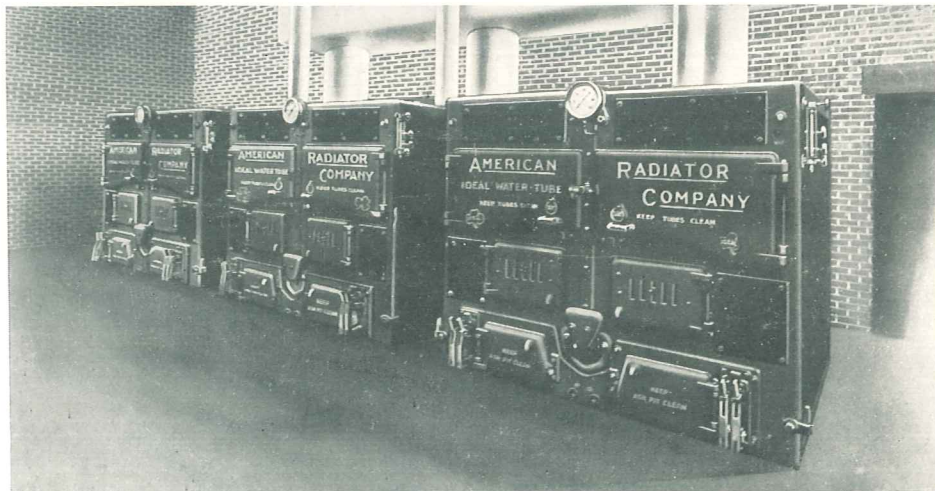
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### Especially Well Adapted for Battery Installation

It is a fact rarely appreciated that a heating boiler is called upon to operate at 100% of its heat-producing capacity during a very small portion of the heating year. As a matter of fact, a boiler is obliged to function at only about 30% of its maximum heat-producing capacity during the major part of the season. And in apartments, hotels, stores, factories, churches, schools, etc., heating needs fluctuate widely during short intervals within the heating season.

For these reasons a battery of two or more Ideal Water Tube Boilers will prove more economical to use than a large single heating unit. With a battery of Ideal Boilers, only one boiler, or two, or more, according to the size of the building, need be employed during the major part of heating year. When the colder weather and extreme heating loads occur, the entire battery may be put into service. But by using only the minimum number of boilers required to meet normal requirements, as compared with the use of one large boiler, fired low, a very considerable saving both in fuel and labor is effected.

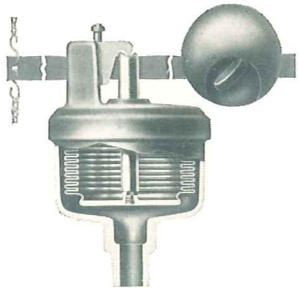
Far-sighted engineers have recognized this fact and are increasingly recommending the use of two or more Ideal Water Tube Boilers as against the use of one large single unit.



Typical battery installation 79" Ideal Water Tube Boilers

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## THE ARCO AUTOMATIC HEAT REGULATOR



Sectional view Arco steam  
pressure regulator

ALL Ideal Water Tube Steam Boilers are regularly equipped with the Arco Automatic Heat Regulator—the most highly developed regulator of its kind manufactured.

This regulator is made entirely of metal and works without friction. It has no rubber diaphragm, packing or piston joint to wear out or get out of order. The Arco bellows with its accordion sides is made of the best flexible seamless steam brass.

As durable as the boiler itself, the Regulator may be relied upon always to respond instantly and with minute precision to changes in pressure within the boiler.

### Advantages of Automatic Regulation

The Regulator is set to maintain any desired pressure. After having been thus set, it assumes the entire burden of maintaining the required heat production at the boiler's outlet; and it performs this function more accurately and dependably than would be possible with continued personal attention.

Should the heat output exceed the desired point, the pressure within the boiler increases. The Arco bellows immediately contracts, and the movement is transferred, through the positive-operating levers, to the draft panel which begins to close. Decreasing the air supply thus checks the fire. Should, however, the heat output of the boiler drop below the desired point, the pressure within the boiler decreases and the reverse action takes place in the Regulator. Always, just the necessary amount of fuel is burned to keep the house comfortably warm. Thus the Arco Automatic Heat Regulator saves time, steps, and fuel.

The Ideal Water Tube Boiler designed for water installation is not regularly equipped with automatic regulation. A special Arco Automatic Heat Regulator for water is available, however, for a slight extra charge.

## ABOUT RADIATION

### *The American Radiator—World Standard of Merit*

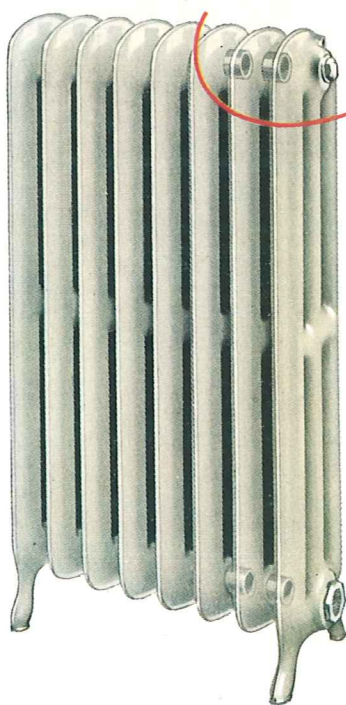
WHEREVER direct radiation is contemplated, particular attention is directed to American Radiators. They offer definite points of advantage.

The sections of all American Radiators are joined on the inside by the special threaded nipple construction illustrated below. The nipples are made of malleable iron and are right- and left-hand threaded. On specially designed machinery the radiator sections are drawn together and joined by these nipples, in such a way as to insure automatically that each nipple is screwed an equal depth into, and has an equal grip on, each section.

This construction unites the advantages of the two basic types of mechanical connection: the faced and the threaded joint. It is the tightest and safest that can be made.

It holds the sections together in true and permanent alignment. It allows new sections readily to be added at a later time, should an extension be desired, and it eliminates the need of the unsightly iron rods and nuts used in the ordinary radiator construction.

It has been primarily on the basis of this superior, inbuilt value that American Radiators have climbed to world supremacy. It pays to insist on American Radiators.



THE SECRET OF A  
PERFECT RADIATOR

*Threaded Nipple Construction*

AN EXCLUSIVE FEATURE  
IN ALL AMERICAN  
RADIATORS

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## AMERICAN PEERLESS WALL RADIATORS

*Especially Designed for Industrial Buildings  
of all Kinds and Sizes*



Section of an American  
Peerless Wall Radiator

ONE of the first considerations in choosing radiation for any industrial plant is the desirability of combining adequate heating with space economy.

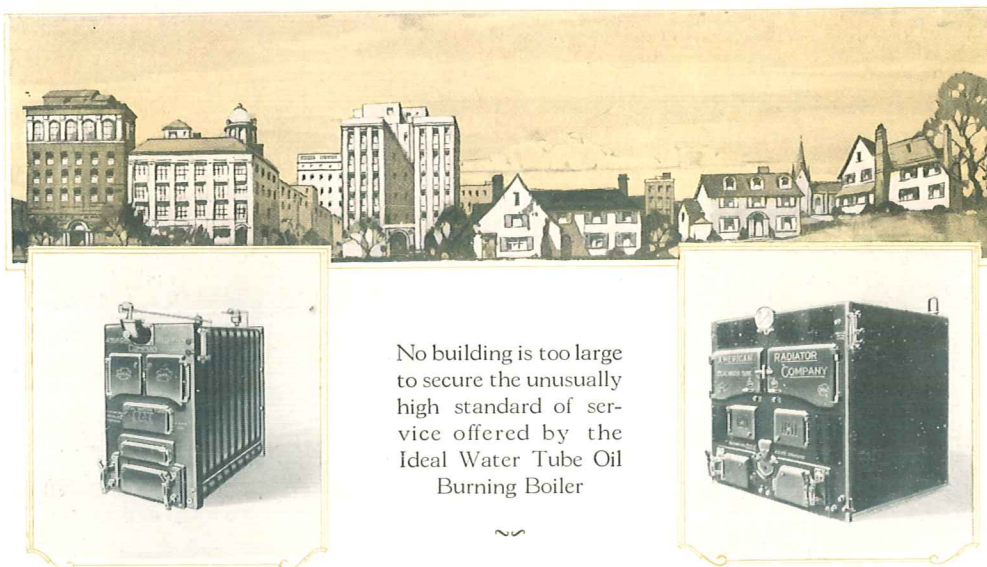
American Peerless Wall Radiators are made in sections in a wide range of sizes and with provisions for numerous groupings. They may, therefore, be assembled to meet any structural condition, fitting into restricted spaces under windows or between them, on ceilings, or in sky-lights.

And united to this advantage is the fact that these radiators possess such an unusually high operating efficiency, that to heat any given volume of space they actually occupy from one-third to one-half the amount of space required by other types of direct radiation. As a result, larger windows are possible, better lighting effects, cleaner and more attractive working conditions, and a better organization of the machinery of production.

These radiators may be assembled in small units. Steam can be admitted into only a limited number of units during the milder periods of the heating year, thus securing comfortable temperatures at all times with the very least consumption of fuel.

It is frequently desired, in many types of industrial plants, to utilize exhaust steam for heating purposes. American Peerless Wall Radiators are perfectly adapted to meet this requirement.

Pitting of the inner or outer surfaces of these radiators is unknown. They are thoroughly impervious to rust. By their material, design, and construction, they are a guarantee of satisfactory heating service during the entire lifetime of the building they occupy.



No building is too large  
to secure the unusually  
high standard of ser-  
vice offered by the  
Ideal Water Tube Oil  
Burning Boiler

## IDEAL WATER TUBE BOILERS FOR OIL BURNING

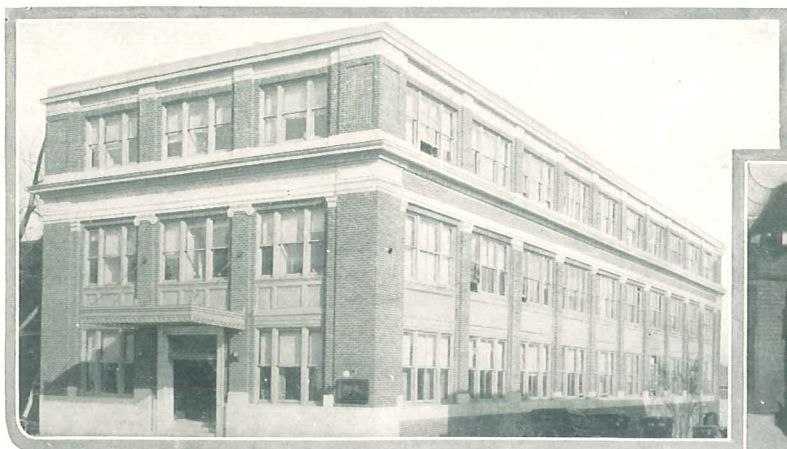
THE steadily increasing use of oil as a fuel for heating purposes has been accompanied by an insistent demand for a first class oil-burning boiler.

All boilers are not suited to the efficient burning of oil, and many boilers which are fairly well adapted to certain types of oil burners are not adapted to the use of others. These are facts which every prospective user of oil fuel should bear well in mind. A little care and study in the beginning will save much time and money in the end.

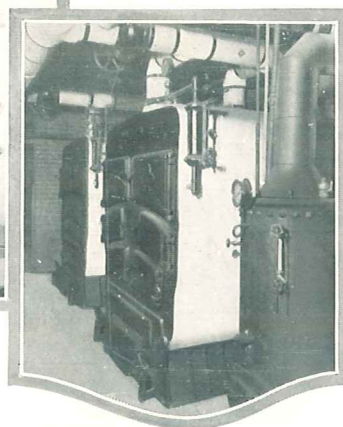
The Ideal Water Tube Oil Burning Boiler is probably the most popular all-round oil-burning boiler in America. Its reputation has been attained through its unique combination of features of design and construction, which adapt it excellently for oil burners of every type.

If you are particularly interested in securing the service of an oil-burning unit, write us and we shall be pleased to send you a copy of our special book entitled: "Ideal Boilers for Oil Burning," which goes fully into the subject.

# TYPICAL IDEAL WATER TUBE BOILER INSTALLATIONS



Greensboro Daily News Building, Greensboro, N. C.,  
heated by two 48" Ideal Water Tube Boilers



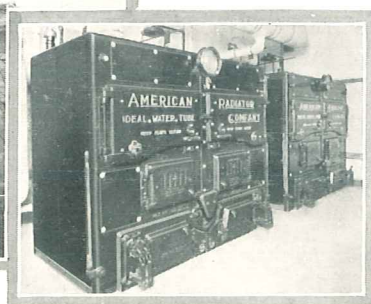
Boreal Club, Buffalo, N. Y.,  
heated by one 29" Ideal  
Water Tube Boiler



Van Allen Motor Service, Buffalo, N. Y., heated by  
one 29" Ideal Water Tube Boiler



The Barnes Foundation, Merion, Pa., heated by two  
79" Ideal Water Tube Boilers

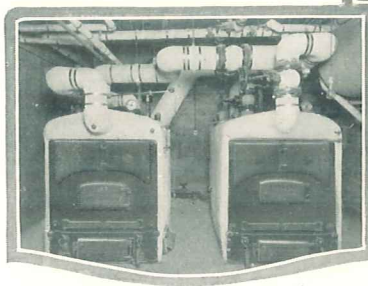




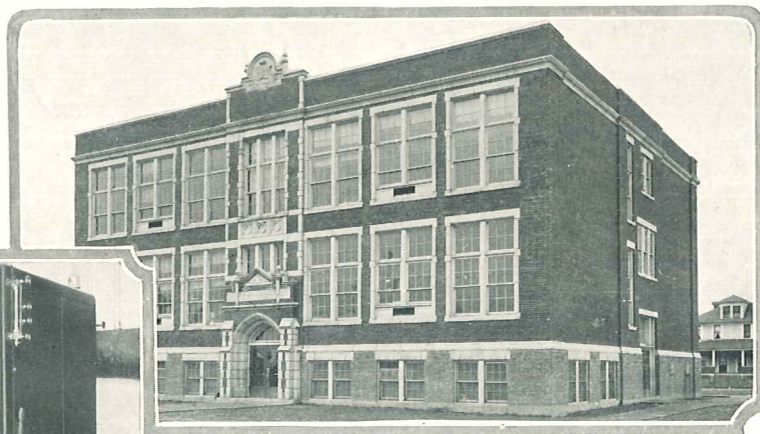
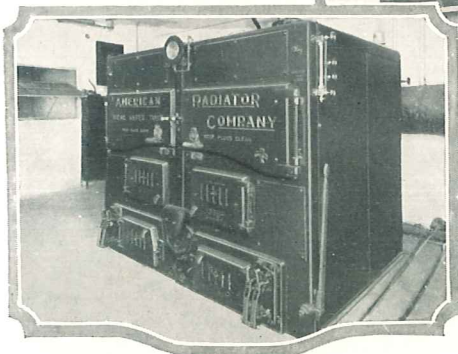
Elmwood Music Hall, Buffalo, N. Y., heated  
by one 65" Ideal Water Tube Boiler



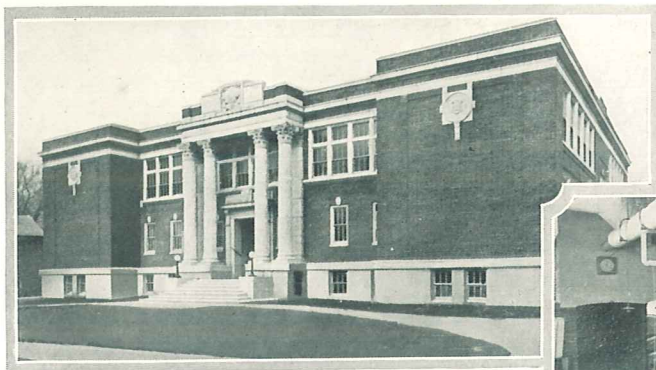
Holy Trinity Lutheran Church,  
Buffalo, N. Y., heated by a bat-  
tery of 36" Ideal Water Tube  
Boilers



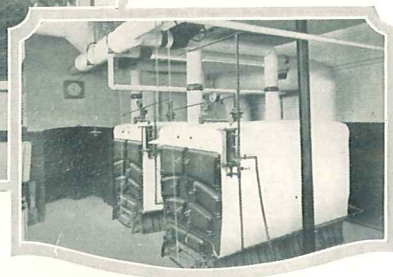
Famous Players-Paramount Film Corp., New York City,  
heated by two 36" Ideal Water Tube Boilers



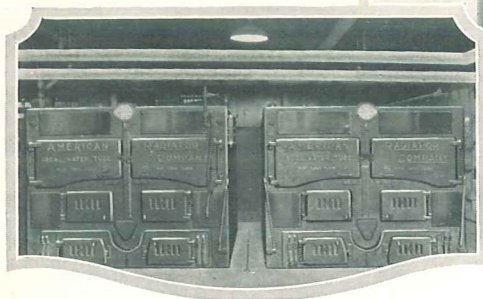
Pringle Street School, Kingston, Pa., heated  
by one 79" Ideal Water Tube Boiler



Bennington, Vt., High School, Bennington, Vt., heated by two 48" Ideal Water Tube Boilers



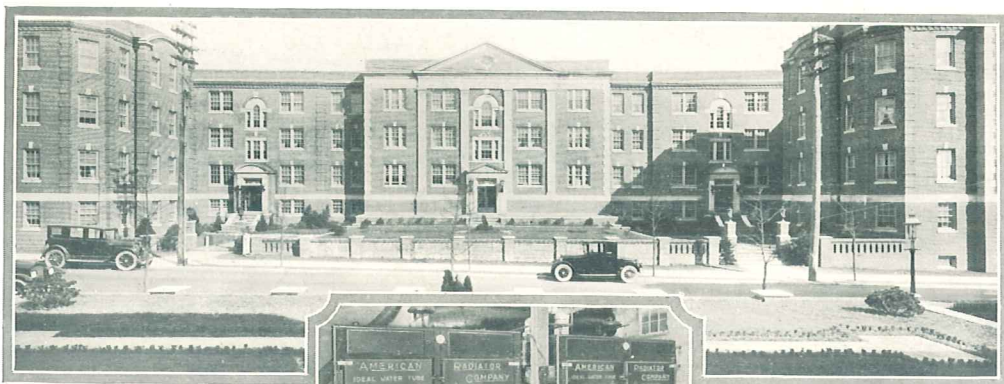
General Offices and Main Warehouse, Great Atlantic & Pacific Tea Co., Brooklyn, N. Y., heated by two 79" Ideal Water Tube Boilers



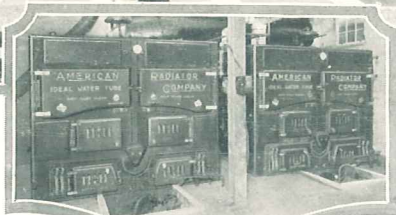
Trust Company of New Jersey, Jersey City, N. J., heated by two 79" Ideal Water Tube Boilers



Hellman Commercial Trust & Savings Bank, Los Angeles, Calif., heated by two 79" Ideal Water Tube Boilers



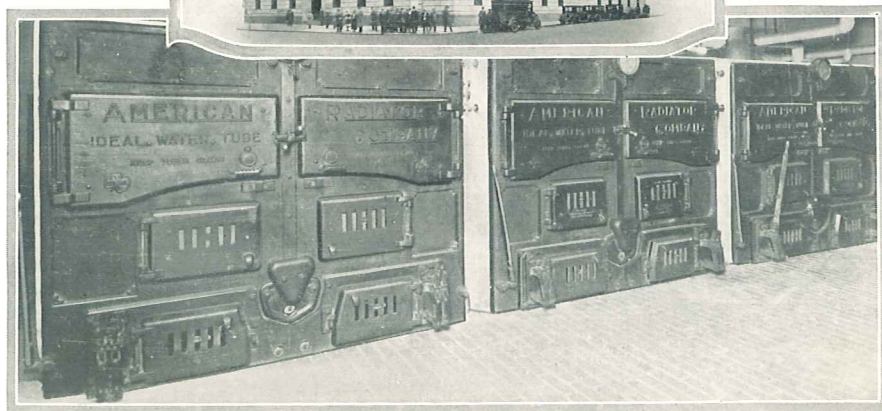
Chatham Court Apartments,  
Philadelphia, Pa.



Heated by two 79" Ideal  
Water Tube Boilers



Littel Building, Buffalo, N. Y., heated by a battery of  
two 48" Ideal Water Tube Boilers



Greenwich Savings Bank, New York City, heated by a battery of three  
79" Ideal Water Tube Boilers

# IDEAL WATER TUBE BOILER

## RATINGS AND DATA

### 23-INCH SERIES

STEAM		WATER		Grate Area Sq. Ft.	Fuel capacity Lbs.	Total Length "L" Ins.	Outlets Number and Size	Inlets Number and Size	Chimney Size Inches	Chimney Height Feet
Number of Boiler	Rating Steam Sq. Ft.	Number of Boiler	Rating Water Sq. Ft.							
S-2305	600	W-2305	975	2.72	164	21	1-4	2-3	8x12	30
S-2306	750	W-2306	1,200	3.36	203	25	1-4	2-3	8x12	35
S-2307	900	W-2307	1,425	4.00	242	29	1-4	2-3	8x12	35
S-2308	1,050	W-2308	1,650	4.64	281	33	1-4	2-3	12x12	35
S-2309	1,200	W-2309	1,875	5.28	320	37	1-4	2-3	12x12	35

### 29-INCH SERIES

Number of Boiler	Rating Steam Sq. Ft.	Number of Boiler	Rating Water Sq. Ft.	Grate Area Sq. Ft.	Fuel Capacity Lbs.	Total Length "L" Ins.	Steam Outlets No. and Size	Water Outlets No. and Size	Steam Inlets No. and Size	Water Inlets No. and Size	Chimney Size Ins.	Chimney Height Ft.
S-2905	1,600	W-2905	2,600	4.84	347	30	1-5	1-5	2-4	2-5	12x16	35
S-2906	2,000	W-2906	3,250	6.05	435	36	1-5	1-5	2-4	2-5	12x16	40
S-2907	2,400	W-2907	3,900	7.26	523	42	1-5	2-5	2-4	2-5	16x16	40
S-2908	2,800	W-2908	4,550	8.47	611	48	1-5	2-5	2-4	2-5	16x16	45
S-2909	3,200	W-2909	5,200	9.68	699	54	2-5	2-5	2-4	2-5	16x20	50
S-2910	3,600	W-2910	5,850	10.89	787	60	2-5	2-5	2-4	2-5	16x20	55
S-2911	4,000	W-2911	6,500	12.10	875	66	2-5	2-5	2-4	2-5	20x20	60

### 36-INCH SERIES

Number of Boiler	Rating Steam Sq. Ft.	Number of Boiler	Rating Water Sq. Ft.	Grate Area Sq. Ft.	Fuel Capacity Lbs.	Total Length "L" Ins.	S. & W. Outlets No. and Size	Steam Inlets No. and Size	Water Inlets No. and Size	Chimney Size Ins.	Chimney Height Ft.
S-3605	2,500	W-3605	4,000	6.00	540	30	1-6	2-4	2-4	16x16	45
S-3606	3,150	W-3606	5,100	7.50	684	36	1-6	2-4	2-4	16x20	45
S-3607	3,800	W-3607	6,200	9.00	828	42	2-6	2-4	*	16x20	50
S-3608	4,450	W-3608	7,300	10.50	972	48	2-6	2-4	*	20x20	50
S-3609	5,100	W-3609	8,400	12.00	1,116	54	2-6	2-4	*	20x20	55
S-3610	5,750	W-3610	9,500	13.50	1,260	60	2-6	2-4	*	20x20	55
S-3611	6,400	W-3611	10,600	15.00	1,404	66	2-6	2-4	*	20x20	60
S-3612	7,050	W-3612	11,700	16.50	1,548	72	2-6	2-4	†	20x24	60
S-3613	7,700	W-3613	12,800	18.00	1,692	78	2-6	2-4	†	20x24	65
S-3614	8,350	W-3614	13,900	19.50	1,836	84	2-6	2-4	†	20x24	70
S-3615	9,000	W-3615	15,000	21.00	1,980	90	2-6	2-4	†	24x24	75

\*Two 3½-in. and two 4-in. †Four 3½-in. and two 4-in.

### 48-INCH SERIES

Number of Boiler	Rating Steam Sq. Ft.	Number of Boiler	Rating Water Sq. Ft.	Grate Area Sq. Ft.	Fuel Capacity Lbs.	Total Length "L" Ins.	S. & W. Outlets No. and Size	Steam Inlets No. and Size	Water Inlets No. and Size	Chimney Size Ins.	Chimney Height Ft.
S-4806	7,750	W-4806	12,500	18.00	1,475	57¾	2-6	4-4	4-6	24x24	65
S-4807	9,000	W-4807	14,500	21.60	1,770	68½	3-6	4-4	4-6	24x24	70
S-4808	10,250	W-4808	16,500	25.20	2,065	79¾	3-6	4-4	4-6	24x24	75
S-4809	11,500	W-4809	18,500	28.80	2,360	90	3-6	4-4	4-6	24x28	80
S-4810	12,750	W-4810	20,500	32.40	2,655	100¾	3-6	4-4	4-6	24x28	85
S-4811	14,000	W-4811	22,500	36.00	2,950	111½	4-6	4-4	4-6	28x28	95
S-4812	15,250	W-4812	24,500	39.60	3,245	122¾	4-6	4-4	4-6	28x28	100
S-4813	16,500	W-4813	26,500	43.20	3,540	133	4-6	4-4	4-6	28x32	105
S-4814	17,750	W-4814	28,500	46.80	3,835	143¾	4-6	4-4	4-6	28x32	110

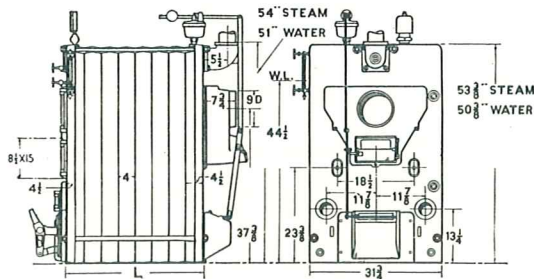
### 79-INCH SERIES

Number of Boiler	Rating Steam Sq. Ft.	Number of Boiler	Rating Water Sq. Ft.	Grate Area Sq. Ft.	Total Length "L" Ins.	S. & W. Outlets Number and Size	Steam Inlets Number and Size	Water Inlets Number and Size	Chimney Size Ins.	Chimney Height Ft.
S-7907	8,400	W-7907	13,440	22.96	48	1-10	1-4	2-10	20x24	60
S-7908	9,600	W-7908	15,360	26.24	54	1-10	1-4	2-10	20x24	65
S-7909	10,800	W-7909	17,280	29.52	60	1-10	1-4	2-10	24x24	70
S-7910	12,000	W-7910	19,200	32.80	66	1-10	1-4	2-10	24x24	75
S-7911	13,200	W-7911	21,120	36.08	72	1-10	1-4	2-10	24x28	80
S-7912	14,400	W-7912	23,040	39.36	78	1-10	1-4	2-10	24x28	85
S-7913	15,600	W-7913	24,960	42.64	84	1-10	1-4	2-10	24x28	90
S-7914	16,800	W-7914	26,880	45.92	90	1-10	1-4	2-10	28x28	95
S-7915	18,000	W-7915	28,800	49.20	96	1-10	1-4	2-10	28x28	100
S-7916	19,200	W-7916	30,720	52.48	102	1-10	1-4	2-10	30x30	105
S-7917	20,400	W-7917	32,640	55.76	108	1-10	1-4	2-10	30x30	110

Safety Valve sizes accord with A. S. M. E. boiler code.

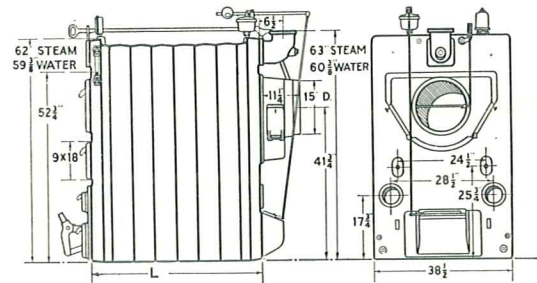
# IDEAL WATER TUBE BOILER DIMENSIONS

23-INCH SERIES



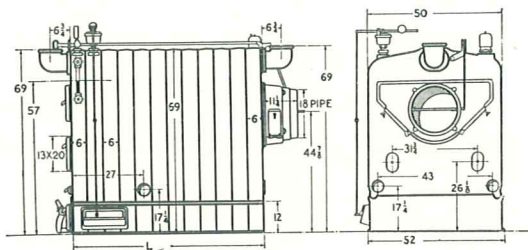
For dimension "L" see page 29

29-INCH SERIES



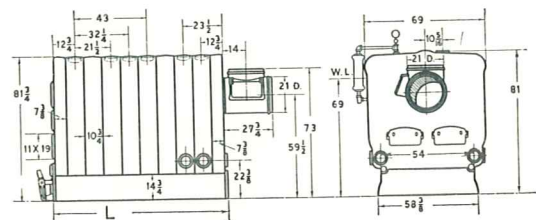
For dimension "L" see page 29

36-INCH SERIES



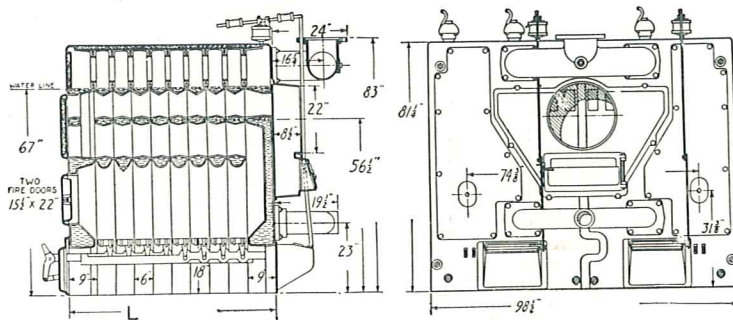
For dimension "L" see page 29

48-INCH SERIES



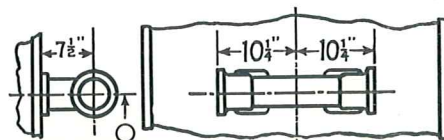
For dimension "L" see page 29

79-INCH SERIES

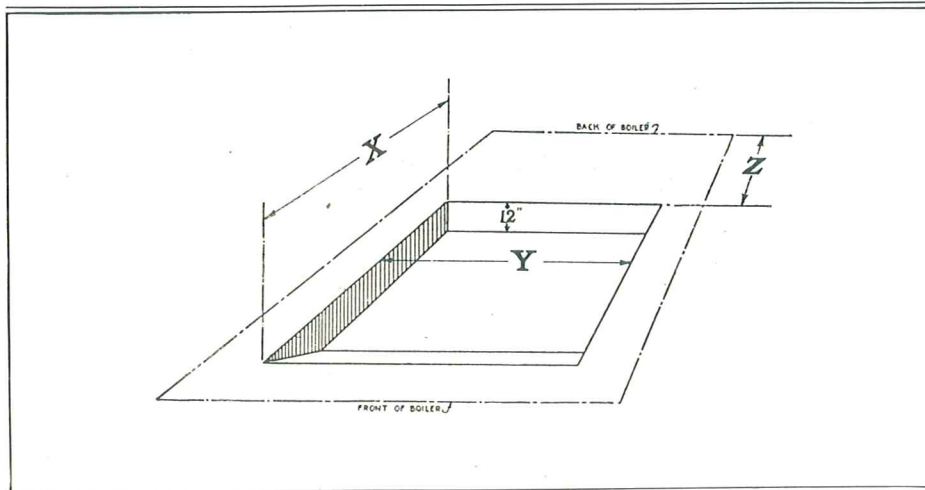


For dimension "L" see page 29

RETURN HEADER FOR WATER BOILERS



# IDEAL WATER TUBE BOILER ASH PIT DIMENSIONS



Number of Boiler	Dimensions in Inches				Number of Boiler	Dimensions in Inches			
	Depth	"X"	"Y"	"Z"		Depth	"X"	"Y"	"Z"
S or W-2305.....	12	16	18	3	S or W-4806.....	12	52	50	2
S or W-2306.....	12	20	18	3	S or W-4807.....	12	63	50	2
S or W-2307.....	12	24	18	3	S or W-4808.....	12	73	50	2
S or W-2308.....	12	28	18	3	S or W-4809.....	12	73	50	14
S or W-2309.....	12	32	18	3	S or W-4810.....	12	83	50	14
S or W-2905.....	12	24	23	3	S or W-4811.....	12	83	50	24
S or W-2906.....	12	30	23	3	S or W-4812.....	12	83	50	35
S or W-2907.....	12	36	23	3	S or W-4813.....	12	94	50	35
S or W-2908.....	12	42	23	3	S or W-4814.....	12	94	50	46
S or W-2909.....	12	48	23	3	S or W-7907.....	12	31	74	8
S or W-2910.....	12	54	23	3	S or W-7908.....	12	37	74	8
S or W-2911.....	12	60	23	3	S or W-7909.....	12	43	74	8
S or W-3605.....	12	24	42	3	S or W-7910.....	12	49	74	8
S or W-3606.....	12	30	42	3	S or W-7911.....	12	55	74	8
S or W-3607.....	12	36	42	3	S or W-7912.....	12	61	74	8
S or W-3608.....	12	42	42	3	S or W-7913.....	12	67	74	8
S or W-3609.....	12	48	42	3	S or W-7914.....	12	73	74	8
S or W-3610.....	12	54	42	3	S or W-7915.....	12	67	74	20
S or W-3611.....	12	60	42	3	S or W-7916.....	12	73	74	20
S or W-3612.....	12	66	42	3	S or W-7917.....	12	73	74	26
S or W-3613.....	12	72	42	3					
S or W-3614.....	12	78	42	3					
S or W-3615.....	12	84	42	3					

## Arrangement of Sections 79-Inch Boiler

Boiler Number	Arrangement 18-19 and 20 section based on actual grate length not over 72"	Actual Grate Length	Length of Fire Box	Grate Area Based on Fire Box Length
S or W-7907	A-5C-H	30	42	22.96
S or W-7908	A-6C-H	36	48	26.24
S or W-7909	A-7C-H	42	54	29.52
S or W-7910	A-8C-H	48	60	32.80
S or W-7911	A-9C-H	54	66	36.08
S or W-7912	A-10C-H	60	72	39.36
S or W-7913	A-11C-H	66	78	42.64
S or W-7914	A-12C-H	72	84	45.92
S or W-7915	A-11C-BW-G-H	66	75	41.00
S or W-7916	A-12C-BW-G-H	72	81	44.28
S or W-7917	A-12C-BW-C-G-H	72	81	44.28

For Arrangement of Sections of 23-inch, 29-inch, 36-inch and 48-inch Boilers, see Ideal Fitter Catalogue pp. 29-30.

# IDEAL WATER TUBE BOILER CHIMNEY SIZES FOR BOILERS IN BATTERY

## 29-INCH SERIES

Number of Boiler	TWO BOILERS			THREE BOILERS			FOUR BOILERS		
	Rating Steam	Size Inches	Height Feet	Rating Steam	Size Inches	Height Feet	Rating Steam	Size Inches	Height Feet
S or W-2905	3,200	16x16	40	4,800	16x20	45	6,400	20x20	50
S or W-2906	4,000	16x16	45	6,000	16x20	45	8,000	20x20	50
S or W-2907	4,800	16x20	45	7,200	20x20	50	9,600	20x24	55
S or W-2908	5,600	16x20	50	8,400	20x20	55	11,200	20x24	55
S or W-2909	6,400	20x20	55	9,600	20x24	60	12,800	24x24	60
S or W-2910	7,200	20x20	60	10,800	20x24	60	14,400	24x24	60
S or W-2911	8,000	20x24	65	12,000	24x24	65	16,000	24x28	65

## 36-INCH SERIES

Number of Boiler	TWO BOILERS			THREE BOILERS			FOUR BOILERS			FIVE BOILERS		
	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet
or W-3605	5,000	16x20	50	7,500	20x20	55	10,000	20x24	60	12,500	24x24	65
or W-3606	6,300	20x20	50	9,450	20x24	55	12,600	24x24	60	15,750	24x28	65
or W-3607	7,600	20x20	55	11,400	20x24	60	15,200	24x24	65	19,000	24x28	70
or W-3608	8,900	20x24	55	13,350	24x24	60	17,800	24x24	65	22,250	28x32	70
or W-3609	10,200	20x24	60	15,300	24x24	65	20,400	24x24	70	25,500	28x32	75
or W-3610	11,500	24x24	60	17,250	24x28	65	23,000	28x28	70	28,750	28x32	75
or W-3611	12,800	24x24	65	19,200	24x28	70	25,600	28x28	75	32,000	28x32	80
or W-3612	14,100	24x28	70	21,150	28x28	75	28,200	30x36	80	35,250	30x36	85
or W-3613	15,400	24x28	75	23,100	28x28	80	30,800	30x36	85	38,500	30x36	90
or W-3614	16,700	24x28	75	25,050	28x28	80	33,400	30x36	85	41,750	30x36	90
or W-3615	18,000	28x28	80	27,000	30x36	85	36,000	30x36	90	45,000	36x36	95

## 48-INCH SERIES

Number of Boiler	TWO BOILERS			THREE BOILERS			FOUR BOILERS			FIVE BOILERS			SIX BOILERS		
	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet
or W-4806	15,500	28x28	65	23,250	30x36	75	31,000	36x36	80	38,750	36x36	85	46,500	42x42	90
or W-4807	18,000	28x28	70	27,000	30x36	80	36,000	36x42	85	45,000	42x42	90	54,000	42x42	95
or W-4808	20,500	30x36	75	30,750	36x36	85	41,000	42x42	90	51,250	42x42	95	61,500	42x48	100
or W-4809	23,000	30x36	80	34,500	36x42	85	46,000	42x42	90	57,500	42x48	95	69,000	48x48	100
or W-4810	25,500	36x36	85	38,250	36x42	90	51,000	42x48	95	63,750	42x48	100	76,500	48x54	105
or W-4811	28,000	36x36	95	42,000	42x42	95	56,000	42x48	100	70,000	48x48	105	84,000	54x54	110
or W-4812	30,500	36x42	100	45,750	42x42	105	61,000	48x48	105	76,250	48x54	110	91,500	54x54	115
or W-4813	33,000	42x42	105	49,500	42x48	110	66,000	48x48	110	82,500	48x54	115	99,000	54x60	120
or W-4814	35,500	42x42	110	53,250	48x48	115	71,000	48x54	115	88,750	54x54	120	106,500	54x60	120

## 79-INCH SERIES

Number of Boiler	TWO BOILERS			THREE BOILERS			FOUR BOILERS			FIVE BOILERS			SIX BOILERS		
	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet	Rating Steam	Size Ins.	Height Feet
S or W-7907	16,800	28x28	65	25,200	30x36	70									
7908	19,200	28x28	70	28,800	30x36	75									
7909	21,600	28x32	75	32,400	36x36	80	43,200	36x42	85						
7910	24,000	28x32	80	36,000	36x36	85	48,000	36x42	90						
7911	26,400	30x36	85	39,600	36x42	90	52,800	42x42	95						
7912	28,800	30x36	90	43,200	36x42	95	57,600	42x42	100	72,000	42x48	105			
7913	31,200	30x36	95	46,800	36x42	100	62,400	42x42	105	78,000	42x48	110			
7914	33,600	36x36	100	50,400	42x42	105	67,200	42x48	110	84,000	48x48	115	100,800	48x54	120
7915	36,000	36x36	105	54,000	42x42	110	72,000	42x48	115	90,000	48x48	120	108,000	48x54	125
7916	38,400	36x42	110	57,600	42x48	115	76,800	48x48	120	96,000	48x54	125	115,200	54x54	130
7917	40,800	36x42	115	61,200	42x48	120	81,600	48x48	125	102,000	48x54	130	122,400	54x54	135

### DATA

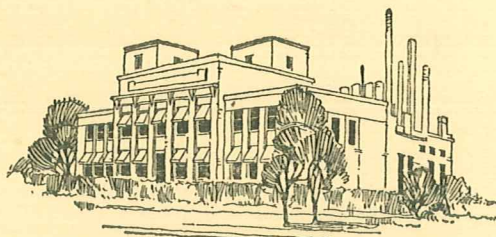
23- and 29-Inch Boilers are regularly supplied without Jacket but will be furnished with Ideal Asbestos-lined Metal Jacket on special order.

36- and 48-Inch Boilers are supplied without Jacket.

### BOILER EQUIPMENT

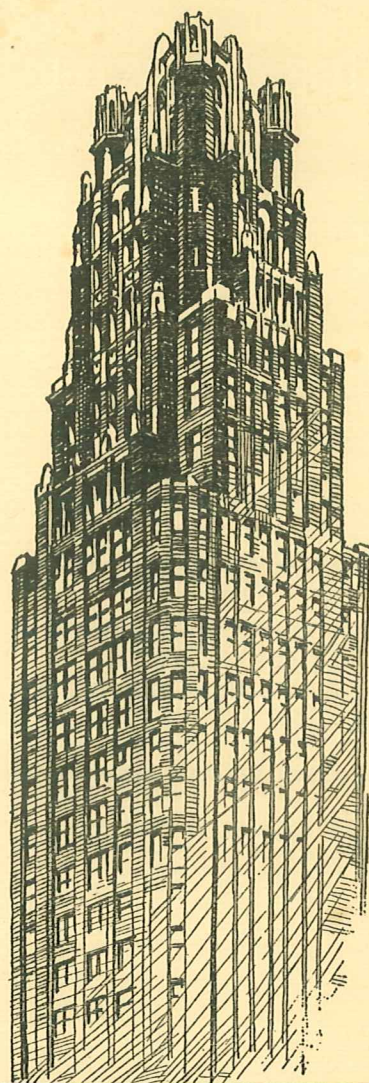
**Steam Boilers**—Steam Gauge. Pop-Safety Valve. Water Column and Trimmings. Firing Tools. Arco Automatic Damper Regulator.

**Water Boilers**—Ideal Damper Control. Firing Tools.



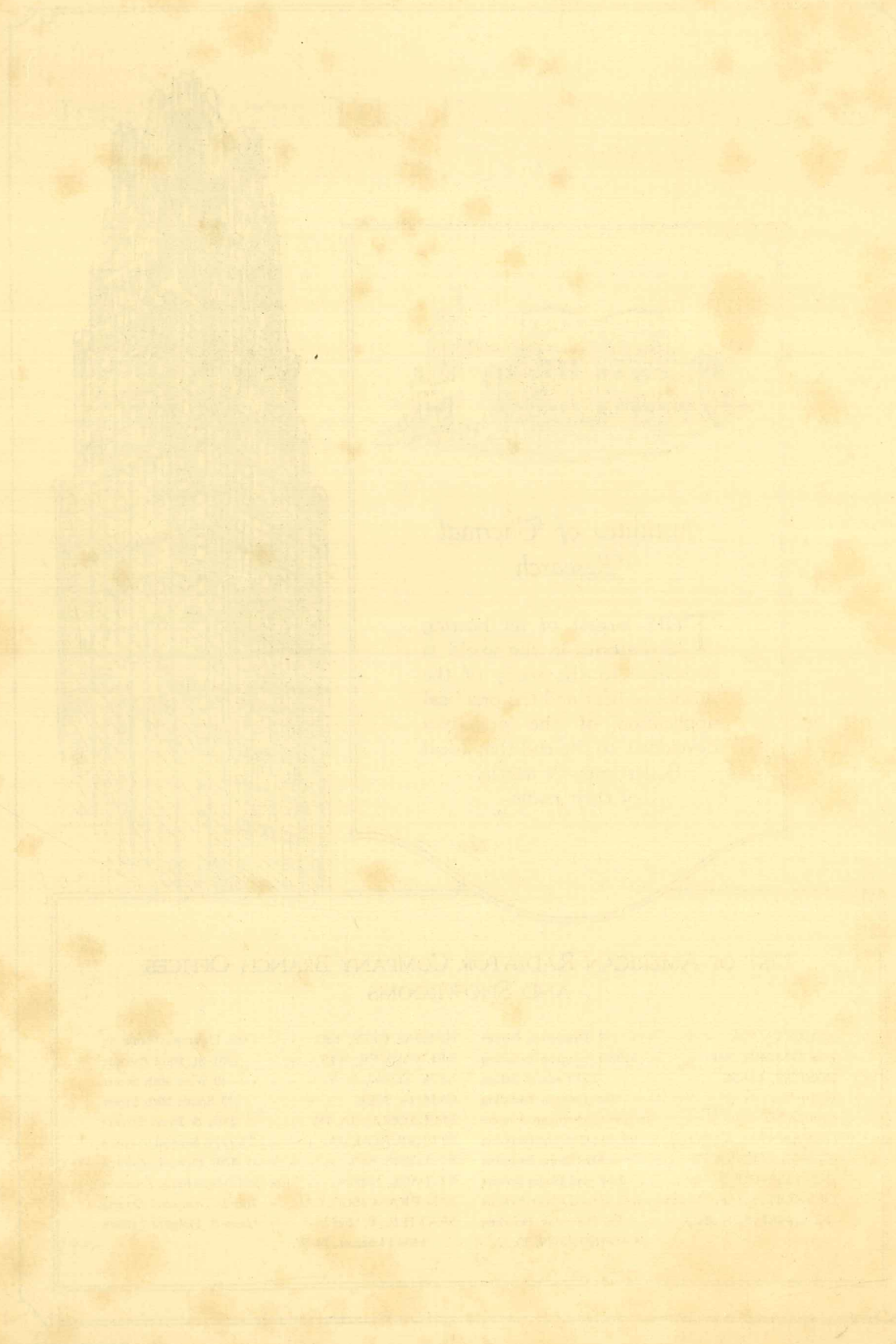
## *Institute of Thermal Research*

THIS largest of all heating laboratories in the world is dedicated to the study of the science of heat and the practical application of the principles developed, to the end that Ideal Boilers may be worthy of their name.



### LIST OF AMERICAN RADIATOR COMPANY BRANCH OFFICES AND SHOWROOMS

ATLANTA, GA. - - - - -	232 Peachtree Street	KANSAS CITY, MO. - - -	906 Davidson Building
BALTIMORE, MD. - - -	1308 Lexington Building	MILWAUKEE, WIS. - - -	1801 St. Paul Avenue
BOSTON, MASS. - - - -	129 Federal Street	NEW YORK, N. Y. - - -	- 40 West 40th Street
BUFFALO, N. Y. - - - -	414 Jackson Building	OMAHA, NEB - - - -	413 South 10th Street
CHICAGO, ILL. - - - -	816 South Michigan Avenue	PHILADELPHIA, PA. - -	25th & Reed Streets
CINCINNATI, OHIO - - -	710-712 Gwynne Building	PITTSBURGH, PA. - - -	337-339 Second Avenue
CLEVELAND, OHIO - - -	509 Hanna Building	ST. LOUIS, MO. - - - -	4201 Duncan Avenue
DENVER, COLO. - - - -	24th and Blake Streets	ST. PAUL, MINN. - - -	Prior and Minnehaha Avenues
DETROIT, MICH. - - - -	Broadway & E. Grand River Avenue	SAN FRANCISCO, CAL. -	2nd & Townsend Streets
INDIANAPOLIS, IND. - -	401 Pennway Building	SEATTLE, WASH - - -	Utah & Holgate Streets
WASHINGTON, D. C. - -	- - - 1308 H Street, N. W.		



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